For more detailed installation, configuration, programming, and operating instructions, refer to the *NXP-TPI/4 Touch Panel Interface* Instruction Manual available on-line at **www.amx.com**.

Main unit

TP4 cards

FIG. 1 NXP-TPI/4 NetLinx Touch Panel Interface 4 (showing main unit and TP4 cards)

ATTENTION!

Verify you are using the latest NetLinx Master and NXP-TPI4 firmware (available from www.amx.com). Verify the TPDesign4 program being used is **Version 2.6 or higher.**

Overview

The NXP-TPI/4 (FIG. 1) is a touch panel interface that supports AMX's 4th generation graphics (G4) consisting of both rich colors and support for high-contrast images. This G4 interface device is capable of mixing Video/RGB inputs and then combining those inputs with graphics, which can then be displayed on a variety of monitors.

Specifications

NXP-TPI/4 Specifications	
Dimensions: NXP-TPI/4 (**FG2275-01**) TP4-RBG/VID (**FG2275-20/10**)	• 2.12" x 16.95" x 10.24" (5.38 cm x 43.05 cm x 26.01 cm) • 1.05" x 2.80" x 8.60" (VID with connector - 9.34") (2.67 cm x 7.11 cm x 21.84 cm (VID with connector - 23.72 cm))
Power: NXP-TPI/4 Input Cards	• 750 mA @ 12 VDC (using a 2-pin PSN power supply) • ~ 400 mA @ 12 VDC power consumption (per card) (*configuration dependant*)
Memory:	• 64 MB SDRAM (upgradable to 256 MB) • 64 MB Compact Flash (upgradable to 1 GB) - factory programmed • Refer to the NXP-TPI/4 Instruction Manual for upgrade information.
Front Components:	• SERIAL programming port • LED Indicators - PWR, ICSP (ICSNet communication), and 4 yellow LEDs (for each input card) • Pushbuttons - RESOLUTION, TOUCH, CALIBRATE, and SETUP
Rear Connectors:	• Touch Input connector communicates with the touch panel • 2 PS/2 ports and 2 USB ports (both for keyboard and mouse control) • VGA Output connector sends out a max. resolution of 1280 x 1024 • 1 RJ-45 Ethernet port and 2 RJ-45 ICSNet ports for network control • Audio connector for use with a 3.5 mm mini-jack
Slots:	• 4 available input card slots. • Use any combination of TP4-RGB and TP4-VID input cards
Output Resolution:	• 640x 480 @60 Hz **to** 1280 x 1024 @ 60 Hz
Input Resolution:	• 640x 480 @60 Hz **to** 1600 x 1200 @ 60 Hz
Included Accessories:	• 2-pin PWR connector (41-5025) • Assembly Kit (Four-#10-32 screws and Four-#10 washers) (KA0001) • NXP-TPI/4 Faceplate (MA2001-11) • NXP-TPI/4 Quick Start Guide (93-2275) • Rack Ear brackets (Left/Right) for shelf, wall, and under-table mounting (62-2275-07)

Removing the Input Card Covers

1. Discharge the static electricity from your body by touching a grounded metal object and disconnect all connectors from the NXP-TPI/4.
2. Carefully unscrew (counter-clockwise) the two flat phillips-head (top of each cover) and round Phillips-head screws (rear of each cover) to remove each card.
3. Remove the screws from the input cards and repeat this removal process for each card.
4. Once the screws are removed, pull the cards upwards and away from the main TPI/4 unit.

Installing Input Cards

1. Follow the instructions above for the process used in removing the input card covers.
2. Carefully remove the input cards from their static-free bag and note the location of the accompanying four Phillips-head screws (used in securing the card to the housing).
3. Carefully align the male (on the card) and female (on the TPI/4 circuit board) connectors.
4. Carefully connect the input card by inserting the male card connectors vertically down onto the female input connectors on the motherboard, as shown in FIG. 2.
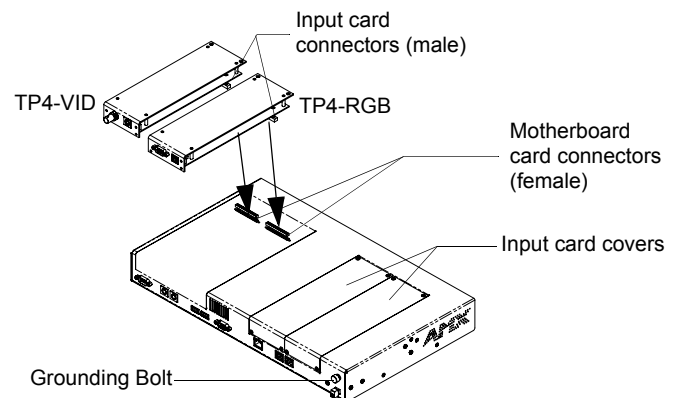
Input card connectors (male)

TP4-VID   TP4-RGB

Motherboard card connectors (female)

Input card covers

Grounding Bolt

FIG. 2 Installing Input Cards

5. Gently push down on the input card (on the location above the pins) until it is securely connected to the motherboard and fits into a card location.
6. Once secure, align the input card into the provided "slot" and verify that the pre-drilled TPD4 card holes (2 on top and 2 at the rear) align with those located on the rear of the TPI/4.
7. Repeat steps 1 through 4 to insert other input cards, if necessary.
8. Screw-in (clockwise) the four screws (per card) to the top and rear of the unit (along the ends of the inserted input card) to secure each card firmly to the TPI/4. *The flat Phillips-head screws must be used on top and the rounded Phillips-head screws must be used on the rear of the unit. All screws must be flush against housing.*

Setting up the TPI/4 for Communication

Step 1: Wiring the NXP-TPI/4

1. Discharge any acquired static electricity by touching a grounded metal object or by touching the rear grounded bolt.
2. Attach an earth-ground wire (typically from the equipment rack) to the grounding bolt, located above the PWR connector on the rear of the TPI/4.
3. Disconnect any incoming power connector from the rear of the TPI/4.
   - A **PSN** supplies power to the TPI/4 through a 3.5 mm mini 2-pin Phoenix connector. The incoming PWR and GND cable from a PSN power supply must be connected to the corresponding location on the rear TPI/4 mini 2-pin PWR connector.
4. Connect a DB9 touch input cable from the touch panel to the DB9 TOUCH INPUT connector on the rear of the TPI/4 unit.
5. Connect the touch panels' HD-15 monitor video cable to the 15-pin VGA OUTPUT port on the rear of the TPI/4. *When using a CRT monitor, use the NullTouch driver.*

6. Connect an Ethernet cable to the rear of the TPI/4. This cable provides 10/100 network connectivity between the unit and the NetLinx Master.
7. Cycle power to the unit. This cycling allows the unit to detect the new configuration.

Note: Verify that all rear connectors are connected prior to the unit being installed onto a surface or within an equipment rack. Once the TPI/4 has been configured, connected, and installed properly; you can then provide power.

Note: The factory-shipped default resolution of the TPI/4 is 640x480@60Hz. If your panel doesn't match the initial TPI/4 output resolution, the following procedures must be done to manually "sync-up" both device settings.

Step 2: Setting the Output Resolution on the TPI/4

1. Firmly press and hold the front TPI/4 **RESOLUTION** button. This single press opens the Resolution Setup page (FIG. 3) on the panel.

Previously saved output resolution
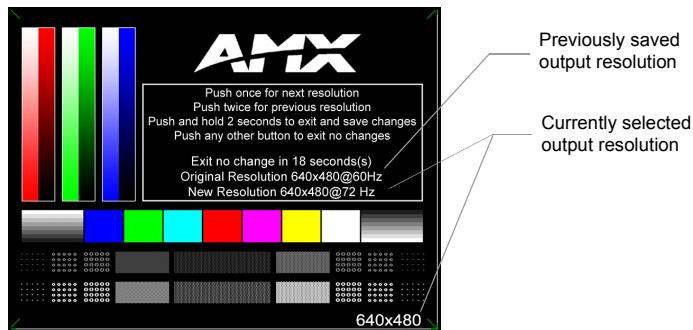
Currently selected output resolution

FIG. 3 Resolution Setup page (showing the comparative resolutions)

Selections originate at a 640x480@60Hz display option and with every consecutive single push of the RESOLUTION button, the TPI/4 resolution increases to a maximum output of 1280x1024@60Hz.

2. Firmly press the **RESOLUTION** button again to cycle through the available resolution settings.
   - Every consecutive button push cycles the output resolution to the next highest available setting.
   - A double-push of the **RESOLUTION** button adjusts the resolution to previous setting. The following list describes the available pixel display and refresh rates.

   - 640 x 480 @60Hz (**initial default**)
   - 800 x 600 @72Hz
   - 1024 x 768 @75Hz

   - 640 x 480 @72Hz
   - 800 x 600 @75Hz
   - 1280 x 1024 @60Hz (**highest setting**)

   - 640 x 480 @75Hz
   - 1024 x 768 @60Hz

   - 800 x 600 @60Hz
   - 1024 x 768 @70Hz

3. Press and hold-down firmly the **RESOLUTION** button to save the resolution setting.
4. A message stating: *"Please wait, loading new resolution..."* appears to indicate the new resolution is being saved. The Resolution Setup page then displays and exits the resolution setup process.
   - If using a CRT monitor, use the monitor's video controls to stretch and move the incoming video so that the borders of the desired resolution pattern follow the edges of the screen without disappearing.
   - Continue with the following step to set the Touch Drivers.

Step 3: Setting the Touch Drivers

After matching the resolution between the TPI/4 and the touch panel, the next step is to select the appropriate touch driver.

1. Press the **TOUCH** button on the front of the TPI/4 to open the on-screen Protected Setup page (FIG. 4). *The Touch Input Driver is defaulted to EloTouch.*
2. Press the TOUCH button again to cycle through the available touch input drivers until the correct driver appears within the on-screen Touch Input Driver field. *Choose **NullTouch** when using a CRT monitor.*
3. Press the on-screen **Reboot** button to save your changes and reboot the connected TPI/4.

Note: **Verify the selected touch drivers match the connected touch panel.**
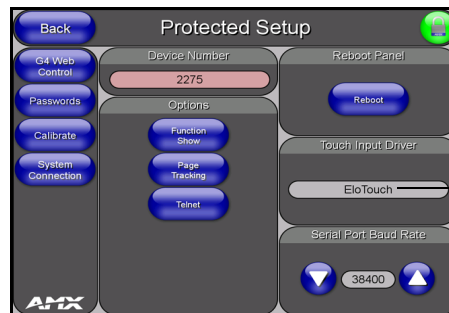
Select **NullTouch** when using the CRT monitor - *default is EloTouch*

FIG. 4 Sample Protected Setup page

Step 4: Calibrating the TPI/4

1. Firmly press the front **CALIBRATE** button on the TPI/4. This process opens a calibration page that uses a series of cross-hairs coordinates to calibrate the touch panel for use with the TPI/4.
2. Press the two on-screen cross-hairs to set the calibration points on the touch panel.
3. If the calibration fails, repeat the above steps to select another driver and recalibrate. ***NO calibration is necessary with a CRT monitor.***
4. After the *"Calibration Successful."* message appears, press anywhere to return to the Setup page.
5. Press the on-screen **Reboot** button (from the Protected Setup page) to save any changes and reboot the connected TPI/4.

Step 5: TPI/4 Setup and System Connection

1. Press the **TOUCH** button on the front of the TPI/4 to open the on-screen Protected Setup page (FIG. 4).
2. Press the *Device Number* field to open the on-screen Device Number keypad and enter a value for the panel *(default is 2275)*.
3. Press **Done** when finished and press the on-screen **Reboot** button to cycle power to the panel.
4. Press the front panel **TOUCH** button to return to the Protected Setup page.
5. Press the **System Connection** button to open the System Connection page (FIG. 5).
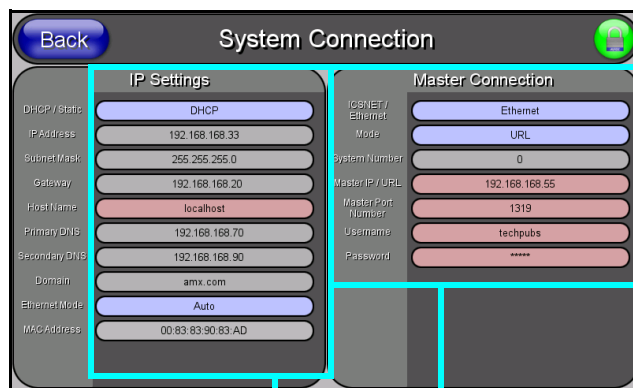
Panel's connection information

NetLinx Master's connection information

FIG. 5 Sample System Connection page

6. Toggle the *DHCP Static* field to **DHCP**.
7. Toggle the *ICSNET/Ethernet* field to **Ethernet**.
8. Toggle the *Mode* field to **URL**.
9. Enter both the System Number and IP Address of the target Master.
10. Enter a valid username and/or password if the target Master is secured.
11. Press the **Back** button and then press the on-screen **Reboot** button to save any changes and cycle power.